IN THE CLAIMS:

Please amend the claims as follows:

1. (Previously Presented) A method of utilizing a performance monitor cell for distributed optical performance monitoring in a network, comprising:

selecting a frequency range based on network traffic protocol and transmission rate;

tapping a portion of a signal in the network;

converting the portion of the signal to a digital signal;

sampling 1024 points in the digital signal continuously at a frequency;

determining an average power of the points;

generating a spectrum in the frequency domain utilizing a Fast Fourier Transform;

generating a noise spectrum density from the spectrum and the frequency range; and

calculating an optical signal to noise ratio (OSNR) from the noise spectrum density and the average sampled points, wherein the optical signal noise ratio is used to determine the performance of the network.

2. (Currently Amended) The method of Claim ~~2~~ 1, further comprising computing ~~an~~ the average optical power from a pre-saved calibration table.

3. (Currently Amended) A method of utilizing a performance monitor cell for distributed optical performance monitoring in a network, comprising:

tapping a portion of a signal in the network and converting the portion of the signal to a digital signal;

sampling a plurality of points in the digital signal for a predetermined amount of time wherein the plurality of points is approximately 1024 points;

computing an average power of the plurality of points;

computing a Fast Fourier Transform and obtaining a spectrum in the frequency domain;

calculating a noise spectrum density from a spectrum and a frequency range based on network traffic protocol and transmission rate; and

calculating an optical signal to noise ratio (OSNR) from the noise spectrum density and a predetermined calibration data, wherein the optical signal noise ratio is used to ascertain the performance of the network.

4. (Cancelled)

5. (Cancelled)

6. (Previously Presented) The method of Claim 5, prior to the computing step of the average power of the plurality of points, the plurality of points are sampled continuously at a frequency.

7. (Cancelled)

8. (Original) The method of Claim 3, wherein the computing of the OSNR is based on the following equation:

$$OSNR = \frac{P_{sig}}{P_{ase}} \frac{B_o}{R}$$

where the symbol "P_{sig}" denotes a signal power, the symbol "P_{ase}" denotes an Amplified Spontaneous Emission (ASE) power, the symbol "B_o" denotes a filter band width, and the symbol "R" denotes a wavelength resolution.

9. – 14. (Cancelled)

15. (Currently Amended) A method of utilizing a performance monitor cell to monitor a channel in a multiplexer, comprising:

tapping a portion of a signal from the channel and converting the portion of the signal to a digital signal;

sampling ~~at least~~ 1024 data points in the digital signal continuously at a frequency;

determining an average power of the sampled points;

calculating a noise power density, wherein the noise power density is calculated by utilizing a spectrum in a frequency domain and a selected frequency range based on traffic protocol and transmission rate; and

determining an optical signal to noise ratio (OSNR) from the noise spectrum density and the average power of the sampled points, wherein the optical signal noise ratio is used to ascertain the performance of the multiplexer.

16. (Currently Amended) The method of Claim 3 [[5]], wherein the predetermined amount of time is 10 ms.

17. (Cancelled)

18. (Cancelled)